

EMBODYING KINAESTHETIC STIMULANTS IN A TECHNOLOGICAL WORLD

*A KINAESTHETIC EXPLORATION OF WESTERN TECHNOLOGY'S AFFECT ON THE BODY TO EXTRACT
ORIGINAL CHOREOGRAPHY*

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Abstract

This thesis addresses the potential kinaesthetic influences technology has on the body and how these influences can be used to extract original choreography. Based on Gretchen Schiller's assertions that the body's interactions with technology "contribute to the range of one's movement repertoire and kinaesthetic condition" (Schiller 109), this research purports that the body's interactions with transportation technology (specifically trains, subways, and automobiles), hand-held technology (cell phones, video games, and electronic children's toys), online networking, and the television, affect its kinaesthetic condition. This is achieved through the body's experience of new shapes, tensions, and weight-holding patterns. The individual experiences of urban Western bodies are specifically researched, particularly those in Toronto, Canada. Through site-specific movement explorations, this thesis argues that a heightened kinaesthetic awareness allows a choreographer to extract technological qualities and create original choreography. This process will, in turn, widen the choreographer's awareness to other kinaesthetic movement inspirations.

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Introduction

Technology has become, in many ways for individuals living in 21st century modern cities, the fabric of our lives: it is the means by which we travel, the source of our entertainment, and the way in which we communicate. There are, likely, very few individuals who could contest that technology does not play a significant part in their day-to-day lives. With its constant presence, I assert that technology has a definite influence on the body's kinaesthetic condition. This thesis investigates the ways in which technology impacts the human body. In doing so, it argues that by extracting the stimulations the body encounters from technology, these interactions offer potential for original choreography.

This research extends the work by choreographer and screen-dance artist, Gretchen Schiller. In her article, "Kinaesthetic Traces Across Material Forms," Schiller contends that the body's day-to-day interactions with technology have developed within the individual a "technically mediated socio-kinaesthetic condition" (Schiller 109). Schiller writes:

"Vibrations from the car, acceleration in a plane, deceleration in a train or a descent in an elevator are all kinaesthetically felt, technically mediated experiences. These technical systems intersect continuously with our sense of movement inside, around and far away from our bodies. Whether apprehended passively or actively, these experiences contribute to the range of one's movement repertoire and kinaesthetic condition. We may not, however, be conscious of this perceptual technical-kinaesthetic inscription which takes place in the movement field we live in." (Schiller, "Kinaesthetic Traces Across Material Forms", 109)

Schiller's work focuses on bringing these technologically felt sensations to the forefront of the mover's awareness through installation choreography. In comparison, this research asks the choreographer to pay attention to the technological sensations she¹ experiences on a daily basis. She is asked to focus her attention inwards, tuning into the subtle visual, audible, and kinaesthetic reactions that occur when the body is in contact with technology. Since she may not

¹ It should be noted that the use of "she" in this paper refers to both male and female inclusively.

have been aware of the subtle reactions occurring within her kinesphere, the choreographer will realize new movement qualities to explore and develop within the studio. The ultimate result is a mover who has developed a better understanding of her body's form and condition in relation to technology. Furthermore, the choreographer has achieved a deepened kinaesthetic awareness that allows her to extract original choreography.

While this research might apply to the kinaesthetic experiences of multiple urban cities, such as New York or London, this research will primarily focus on the kinaesthetic technological experiences of individuals who frequent downtown Toronto. Given that, as Marshall McLuhan states, the electric age has turned the world into a “global village”², many of the technologies within these urban centres are similar, if not the same. For this reason, I support my findings with research from the U.S. and Europe. The shrinking of time and space that electric media has created, along with process of globalization, suggests that the kinaesthetic experiences of individuals with technologies from various cities will also be similar. Since, however, the movement explorations were performed in Toronto, this research will remain focused on this particular geographic area.

Through a series of tactile movement explorations, this thesis considers various forms of technology and how they each specifically impact the body. The results of these explorations were developed into three unique choreographed works: A self-produced piece entitled, “Steel Flesh”, an autobiographical solo entitled, “My Technicolor Playmate”, and a proscenium piece entitled, “The Cyborgs’ Plight”.

The preliminary movement investigations explored urban transportation technology (trains, subways, and automobiles) to observe the ways in which urban technologies impact the body.

² The global village refers to the contraction of space and time electronic media has created, making the passage of information between various points instantaneous.

The qualities extracted from these investigations were used to question how an individual's environment and habitual technological encounters influence her movement. Since this thesis states that technology alters and shapes the body, it was important to initially explore how the body has already acquired technological stimulants from urban environments. Muscle memory explorations were thus practiced to consider how our experiences of technology, combined with the ways in which we use technology, might already be lingering in the kinesphere. These kinaesthetic memories were brought to the forefront of the dancer's awareness and developed into movement investigations.

Once a foundation for the research had been acquired, I could then build upon the movement extraction in urban settings. Using the "Alexander Technique" as a means for extraction, I performed tactile movement explorations on subways, cars, and trains. Principles of the "Authentic Movement"³ practice were also applied to ensure that the movements derived from the explorations were not forced or preconceived. Exploring Authentic Movement, in addition to the Alexander Technique, revealed that the individual's body is not always affected by the technology itself. Rather, it is the ways in which we, both as individuals and as a collective group, *use* the technology that alters our kinaesthetic conditioning.

These explorations provided a foundation for this research and would become the choreographic substance for "Steel Flesh". Through this kinaesthetic process, it is evident that the choreographer can deepen her kinaesthetic awareness to realize the impact of urban technology on the body. This, in turn, will allow her to develop original choreography.

I then took the principles explored in urban settings and performed similar movement investigations with technologies that are often found inside the home, namely, televisions, toys,

³ Practicing Authentic Movement allows an individual to heighten her awareness of the body's form in relation to the technological environment. This, in turn, can rid the body of its accustomed holding patterns and allow an individual to discover subtle stimulations occurring within the environment.

and video games. Through these movement explorations, I questioned how these devices affect the movements and the kinaesthetic conditions of children. Theorists, such as developmental psychologist Jean Piaget, have argued that a child's environment (including the toys she interacts with) heavily influences the way she learns and develops (Davies 44). As I will later make evident, the environment modern Western children inhabit is saturated with technology (Rideout ET AL., "Zero to Six", 4). Given technology's constant presence, the media these children interact with are shaping their kinaesthetic condition. McLuhan notes that this shaping or re-shaping comes from technology's ability to change the "scale or pace or pattern that it introduces into human affairs" (McLuhan 8). Movement explorations, as well as analysis of children interacting with both electronic and "traditional" toys, were conducted to explore how what children experience in their environments affects their movements.

This research also considered how the content of a television show could influence a child's movements. According to Professor Roberta Golinkoff, a specialist in infant linguistic development, the television is an increasing presence in the child's day-to-day activities (Golinkoff ET AL. 5). If, as Piaget notes, a child is directly influenced by the environment within which she interacts, then the television's constant presence affects a child's movement and kinaesthetic condition. Analyses of children's movements in relation to technology, as well as movement explorations, were performed to consider how the content of a television show or an electric toy with might influence a child's movements. The choreography extracted from these explorations was used to create "My Technicolor Playmate".

Once the kinaesthetic affect of various technologies on the body had been explored, I then considered how these "artificial" (in the sense that they derive from something inorganic) stimulations have altered the ways in which individuals interact with each other. While the

process of extracting choreography for this research is primarily focused on an individual's personal interpretations, it is necessary to question how these experiences affect a community of bodies living in close proximity. Richard Shusterman notes in his book, *Thinking Through the Body*, that the muscles' of the human body are affected when there are other bodies in close proximity:

“We develop ways of being with and reacting to certain other bodies, and these modes of relationship are incorporated into our muscle memory as habitual attitudes or schemata of action that are spontaneously recalled and repeated in the presence of those other bodies” (Shusterman, 96).

If the human body can develop a subconscious kinaesthetic relationship with other living beings, it is plausible that it can develop similar sensations within a technologically saturated environment. This premise was explored through movement explorations with the dancers.

Social media was also considered as a factor that may influence the emotional and kinaesthetic interactions between individuals. As previously discussed, media technology, such as radio, television, and the internet, have made the Earth a “global village” that transcends the boundaries of space and time. With the advent of social media, this village reaches further than ever before, allowing individuals to instantly connect with others around the globe. Given that the Nielsen Social Media Report saw a 24% increase on time spent engaging online from 2011-2012, we know that these platforms are changing the more “traditional” (face-to-face) ways that individuals socially interact (NM Incite and Nielsen 5), as well as the qualities of these relationships that might develop (The Innovation of Loneliness 2013). Yet, I was intrigued to explore how these interactions affect the kinaesthetic energy between moving bodies. To determine whether there exists a deeper or a less intimate kinaesthetic connection between bodies, the extracted qualities from previous movement investigations were given to the dancers who interpreted “The Cyborgs’ Plight”. The dancers were then asked to use the extracted

qualities to interact with one another. From analyzing these interactions, it is evident that the effects of both social and industrial technology do indeed impact the ways in which individuals kinaesthetically relate within space.

By dissecting the movement explorations researched throughout the creative process, this thesis makes evident that technology does indeed influence the body's kinaesthetic condition. Through this method, this thesis finds that the heightening of one's kinaesthetic awareness allows the choreographer to extract original choreography.

Creative Process Part 1: Heightened Kinaesthetic Awareness and Urban Technologies

Urban Landscapes: Relationships Between Space and the Body

At the commencement of this research, my primary interest lay in exploring the urban technologies and structures that provide the foundation for our individual environments. The urban landscape an individual inhabits forms the structures within which she lives, works, and socializes, thereby shaping her kinaesthetic condition (Schiller, “Kinaesthetic Inscriptions”, 100). In turn, human’s technological advancements evolve the structures and efficiencies of cities by creating technological objects that, as Sociologist Gilbert Simondon describes, “[embody] the human efforts that contributed to [their] genesis.... [H]uman efforts remain relationally embodied in the technological object[s] or invention[s] [themselves]”⁴ (Schiller, “Kinaesthetic Inscriptions”, 105). Therefore, an interrelationship is created between the city and the body in which both are continually impacting and evolving one another. In *Understanding Media*, McLuhan drew on James Joyce’s *Ulysses* to reflect on the city as an extension of man’s biological composition:

“Housing as shelter is an extension of our bodily heat-control mechanisms – a collective skin garment. Cities are an even further extension of bodily organs to accommodate the needs of large groups. Many readers are familiar with the ways in which James Joyce organized *Ulysses* by assigning the various city forms of walls, streets, civic buildings, and media to the various bodily organs.” (McLuhan 123-124).

McLuhan’s analysis supports Simondon’s theory by essentially describing the city as the body. This premise is further explored in Elizabeth Grosz’s paper, “Bodies-Cities”. Grosz contends that there is a two-way linkage between the body and the city, which makes them

⁴ Simondon describes these technological objects as “transindividual” (Schiller, “Kinaesthetic Inscriptions” 105).

“not as megalithic total entities, distinct identities, but as assemblages or collections of parts, capable of crossing the thresholds between substances to form linkages, machines, provisional and often temporary sub-or microgrouping” (Grosz, 248). What these theorists reveal, then, is that there is an integral relationship the city and the body. As such, the city is a key source for influencing the body’s movement.

Once I had selected the urban cityscape as the backdrop for my movement investigations, I narrowed the source for movement extraction down to transportation technology, specifically, trains, subways, and cars. I selected these machines, not only because they are a technology that many urban dwellers use on a daily basis, but also because they extend and empower the physical capabilities of the human body. In addition, their enclosed mobile structures make the human body entirely susceptible and pliable in their mechanic power. McLuhan again notes in *Understanding Media* how the increasing power of man’s technologies continues to alter the kinaesthetic condition:

“The transformations of [wheel] technology have the character of organic evolution because all technologies are extensions of our physical being. . . . Butler, himself, had at least indicated that machines were given vicarious powers of reproduction by their subsequent impact upon the very bodies that had brought them into being by extension. Response to the increased power and speed of our own extended bodies is one which engenders new extensions. Every technology creates new stresses and needs in the human beings who have engendered it” (McLuhan 182-183).

Though transportation technology is an extension of the human faculties, it is overwhelmingly more powerful than an individual human body could ever hope to muster. These technologies thus have the potential to alter and shape our bodies in ways we could not possibly imagine. For this reason, transportation technology became the perfect subject for movement extraction.

Muscle Memory: Recalling Technology's Impact

Since this research asserts that the body is shaped by experienced kinaesthetic impulses, it is necessary to investigate the ways in which these vibrations have already become ingrained within the body. Examining muscle memory as a source for choreography was thus the first step in the creative process. Pragmatist philosopher Richard Shusterman contends that the interactions the body experiences on a daily basis are not only remembered, but are also a key source for situating the body within space and time:

“[W]e know the world largely because we inhabit it through our soma. Because, as a body, I am also a thing among things in the world, that world of things is also present and implicitly comprehensible to me. Because the soma as subjectivity is affected by the world's objects and energies, it incorporates and implicitly remembers their regularities, thus recalling features of spaces and places without needing to engage in explicit recollection or reflection...One's body supplies this point of view – one's center or origin of coordinates – by being what locates a person in space and gives that lived space its directionality. Moreover, it also gives our sense of the volume of space, an experience and ability that depends on the body's powers of locomotion” (Shusterman 94).

If the continual surrounding sensations orient the body within space and time, then the repeated technological interactions encountered within these environments have an integral effect on the body and its movement. As previously noted, Schiller states that technologically sourced kinaesthetic sensations may not be consciously felt. That does not mean, however, that the body's sensory components are immune to the sensations. The nerves within the body provide a constant pathway for stimulus and “[t]here is no part that is not in some way sensitive to pain or other sensations” (Craze 121). Since the nervous system is interconnected by the peripheral system (the nerve that has contact with the stimulus) and the central system (the nerves connected to the spinal cord and the brain), everything the body comes into contact with influences its main system of communication. Therefore, Schiller's posit is inherently true.

Even if we are not aware of it, the body cannot help but be influenced by external technological stimuli.

To determine how these sensations have lingered in the body, I performed muscle-memory explorations with the dancers in the studio. These explorations, along with the movement investigations on the subway, were filmed so the movements extracted could be studied. I asked the dancers to lie down, close their eyes, and quiet their minds, drawing their focus inwards to the body. This meditation-like practice is similar to the method of Mary Starks Whitehouse, pioneer of the technique, for extracting Authentic Movement:

“Authentic Movement trains and develops the functioning of a non-interfering conscious awareness which observes, acknowledges and remembers previously unconscious material without prematurely shaping it into finalized form. Through the merging and mutually superimposing of consciously and unconsciously motivated experience, Authentic Movement informs the deliberate shaping into performance with a more precise kind of circumspection: a checking up on one’s faithfulness to what has been uncovered from the depth. Not by turning back for that...would be fatal, but through trusting that, if we remain tuned in every cell, the re-found Muse of our own unlimited creative self is following closely behind as we emerge into the daylight from the journey into the mysterious darker realms where we must go find her” (Koltai 1994).

Allowing the dancers to focus their attention inwards towards their muscles and their previous technological interactions allowed them the opportunity to “switch off” any preconceived movements they may wish to perform. Instead, the dancers could open their awareness to other, more authentic, forms of inspiration. I then asked the dancers to recall the technological sensations of driving a car, to see how these kinaesthetic influences had lingered within each kinesphere (See appendix for a more detailed account of these explorations).

Overall, this task proved more difficult than initially anticipated. Particularly in a quiet and empty studio, the chaotic sensations of the city become a distant memory. This makes any attempt to replicate the technological sensations feel unauthentic. I soon realized there was a distinct flaw in the methodology of this exploration: I had asked the dancers to recall the

kinaesthetic experience of driving a car, while asking the dancers to lie down on the floor. Since the body does not customarily lie down in a car, I was not allowing the dancers to recapture an authentic experience. To rectify the situation, I had the dancers sit in chairs and continue the movement exploration. This situational change allowed the dancers to better recall their kinaesthetic stimulants and to develop movement.

Though it is difficult, the task of recalling unconscious movements is not as daunting for dancers. Dancers possess what Shusterman refers to as “situational memory”. This is the capability athletes possess to “spontaneously recognize (through implicit somatic memory) those situations in which they should pass the ball and to whom and at what speed and trajectory they should pass it” (Shusterman 96). Since dancers already have a keen understanding of every facet of their body, asking them to recall other “everyday” tasks is a reasonable request. This proved true once I had the dancers sitting in a more appropriate position for movement extraction. By orienting the dancers as if they were in a car allowed them not only to discover that they could indeed recall unconscious movement, but also, that the dancers could hone these qualities into rich movement for choreographic creation.

Sensorial Awareness: Using the “Alexander Technique” to Extract Movement

Now that it was determined we could recall previously felt sensations, it was time to extract new movement from present interactions with technology. To extract movement, I incorporated a technique that involved sensing the body’s kinaesthetic developments through space. I later learned that the technique I’d adopted was similar to the “Alexander Technique”. Developed by Frederick Matthias Alexander in the 1890s, the Alexander Technique is a practice-

based method that asks the individual to recognize her patterns of excessive tension and misalignment within her kinesphere. From there, the technique asks the individual to release these tensions and come to an inherent “good use” of the body.

By paying attention to how an individual performs her daily activities, practicing The Alexander Technique indicates that North America’s “modern” way of living is neither conducive nor a natural state for the human body. In his book, “Teach Yourself Alexander Technique”, Richard Craze states that the very act of sitting in a chair is destructive to human alignment:

“[H]uman beings are not designed for chairs. Chairs haven’t been around long enough for us to evolve into them. If you watch any of the native people of Australia or South America you will observe a natural grace and ease of movement – but you won’t see any chairs... We sit in chairs because we believe we have no choice” (Craze, 20).

Craze goes on to rationalize that the reason chairs are detrimental to the kinesphere has to do with their flawed design. He explains that the chair confuses the bodies’ use of voluntary non-postural and involuntary postural muscles (Craze, 43). Craze notes that the energizing of these muscles is often controlled by the placement of the feet – when the feet are flat, the body knows it is standing; when the feet are up, the body knows it is lying down. But, as Craze notes, sitting is a bizarre combination between sitting and lying down:

“Internal sensors detect where and how we are, in terms of balance and space.... Basically they tell our brains what we are doing and which muscles we need to be able to do it.... As we go to sit down we temporarily lose our balance and for a fraction of a second fall backwards. Result? Yes, all the startle pattern responses come into play and we get very tense every time we sit down” (Craze 38).

Furthermore, when sitting, the body’s involuntary muscles (the muscles that support posture) are not activated properly. Thus, the body calls on the arms, shoulders, and other gestural components for support. All sitting does then is ask voluntary muscles to support weight that they were not designed to encounter (Craze 43). Thus, it is not just *how* the technology works

that affects our bodies. Rather, just as “the medium is the message” (McLuhan 7), the ways in which we *use* the technology are what kinaesthetically condition the body.

Technology’s influence on the body then, arises not entirely from the technology in itself, but in that we primarily encounter it while sitting for long periods of time. In a study gathered from the National Health and Nutrition Examination Survey, Registered Dietitians Jennifer K. Nelson and Katherine Zeratsky found that 50-70% of people spend six or more hours sitting per day and 20-35% spend four or more hours a day watching TV (Nelson and Zeratsky, 2012). From this research, we can contend that many North Americans regularly sit for long periods of time. Since most technologies are designed for use while sitting, the ways in which the human body is affected by technology is not isolated to the devices themselves. Rather, it is the ways in which the technologies are used that determines their kinaesthetic influence. This fact was kept in mind throughout the choreographic process.

Regardless of whether the body’s posture is aligned or misaligned, it is key to note that, when practiced often enough, the body memorizes specific tensions and holding patterns. These movement practices become so ingrained in the body’s routine that they eventually go unnoticed. Alexander proved this in his own movement investigations. Alexander, who developed poor vocal projection due to misalignment, was so used to performing in a certain kinaesthetic manner (head back, neck tight, short breaths), that it *felt* right (Craze, 10). The cause, Craze notes, lies in that we have grown so accustomed to putting abnormal stresses on our body that we no longer know the body’s natural stance:

“[I]t’s a method of coping with the unnatural stresses we put upon the human frame by the demands of civilized living.... We place unbearable burdens on our bodies by the way we live and, because we grow up with the habit of burden, we don’t even realize it – it has come to feel right. We sit in chairs, drive cars, watch TV, use stairs, indulge in ‘sports’, and carry out a million and one unnatural acts that animals don’t” (Craze 17).

Marshall McLuhan supports this theory, rationalizing that the body becomes numb to these kinaesthetic tendencies because it is so focused on the *content* of its action that it forgets the *medium* of action:

“Our conventional response to all media, namely that is how they are used that counts, is the numb stance of the technological idiot. For the ‘content’ of a medium is like the juicy piece of meat carried by the burglar to distract the watch-dog of the mind. The effect of the medium is made strong and intense just because it is given another medium as ‘content.’...The ‘content’ of writing or print is speech, but the reader is almost entirely unaware either of print or of speech” (McLuhan, 17-18).

In the same way, the techniques Alexander had been taught in his acting performance caused undue pressure on his vocal apparatus by pulling the head back and down. Because he believed, as we all do when taught by our mentors, that the techniques he had learned were correct, Alexander was entirely unaware that his body was systematically hindering his ability to perform. Correcting these habits proved to be a difficult and time-consuming process (a process Alexander referred to as “non-doing”), but he was eventually able to correct his misalignment. These findings support the testament that the body does indeed develop a kinaesthetic condition that is difficult to break.

This research, however, is not interested in “correcting” any sort of misalignment. Instead, this process is interested in further exploring and extracting the body’s usual holding patterns and tensions that occur when in contact with technology. Rather than fixing or changing the posture, the mover must dive deeper into the position, questioning where the tension lies, where the body is relaxed, where the weight is being held, and whether these positions can be taken to a further extreme. What we have come across here then is an unending source for movement discovery and self-exploration. This method became the basis for my movement extraction.

Driven Movement: Deriving Movement from Trains, Cars, and Subways

The movement extraction process began the same way many others start their day: with the morning train commute. On the train, I took time to avoid the usual distractions of newspapers and cell phone applications. Instead, I practiced only sitting, closing my eyes to the visual distractions that might take focus outside the body, and turned this attention inwards. This was not always an easy task: The stimulations that the body had grown accustomed to engaging with were a constant temptation. With persistence, however, these temptations were subdued and the focus could be turned inwards. From these movement explorations, I found that the body often tenses when in contact with transportation technology to prevent from falling or shifting into another body. This tension created rigidity in the body's shapes. I then practiced relaxing the body, allowing the body to mimic the train's swaying back-and-forth movement. This practice allowed me to feel the full force of the train's power and to realize a kinaesthetic embodiment of the train I had not previously felt.

For the purposes of this study, once the tensions, shapes, and holding patterns were discovered, it was necessary to employ what Alexander referred to as "inhibiting." That, is, the means of momentarily stopping in order to recognize what the body is doing or is about to do. Alexander recommends incorporating inhibition before an action to "become conscious of what you are doing" (Craze, 30). For this movement exploration, however, it was more important that I immerse myself in the act of doing and then come to inhibition during the task at hand. This method was adopted not only on the train, but also in the car. While driving, I would take time to inhibit the process and notice where my weight was being held and what parts of my body felt tension. I often noticed that while my body remained hunched with the head tilted back, there

was a distinct tension in the hands. These qualities were brought into the studio for further choreographic development.

Another key urban source for movement inspiration was derived from the subway. The subway was a natural choice for movement exploration because of the jarring and unhindered movement influences it provides. The Toronto Transit Commission subway service operates at an average speed of 32 km per hour (as of 2010, according to former TTC Chair Adam Giambrone) (Torontoist 2010), with future Toronto “Rocket” subway cars projected to reach a maximum speed of 88 kilometers per hour (TTC Corporate Communications Department 2012). While these figures may not compare to the speeds a car is capable of travelling, particularly the current speeds of the TTC subway, the compositional structure of a subway car, combined with the way in which its passengers use it, is very different from an automotive car. Firstly, a car enables the passenger to be both seated and secured by a seatbelt, limiting the driver’s mobility. Secondly, a driver is in full control of the vehicle’s acceleration and deceleration, meaning her body is subconsciously prepared for any changes in motion. In comparison, the subway’s lack of seat belts makes the passenger more susceptible to movement. Since the passenger cannot control when the train accelerates and decelerates, her body is often shocked by the sudden changes in movement. These differences make a ride on the subway a more kinaesthetically felt experience. For these reasons, I, as well as my dancers, conducted numerous movement investigations on the subway. These investigations were filmed for further study.

For the preliminary explorations, the dancers and I went into the subway without any expectation as to what would occur. Again, we applied the improvisation principles of Whitehouse’s Authentic Movement by closing our eyes in order to “facilitate a deeper listening to (the) kinaesthetic reality”. This allowed us to “receptively follow the pathway of

sensory/kinaesthetic impulses.... Conscious awareness (the inner Witness) acknowledges and tracks the experience without attempting to lead into any predetermined direction” (Koltai 1994). We did, however, have difficulty tuning out the practiced movements our bodies were accustomed to inhabiting. Whitehouse claimed that “true depth can only be reached if the experience of organic ‘movement sensation’ and ‘feeling meaning’ constitute the raw material for the artist, so that the work is discovered in the body and ‘not preconceived in the head’” (Koltai 1994). Anna Halprin’s⁵ principles of improvisation equally support this theory, as she elaborates in her 1955 essay, *Impulse*:

“The basic method in improvisation is twofold. The first and most important is that the dancer must have no other factor but the kinesthetic sense to rely on in the process of improvising. The second requirement is that there be absolutely no preconceived notion to direct the action.... He must be a craftsman as he uses his kinesthetic sense, and a creator as he thinks with it. He will improvise as a way of unleashing inner experiences, and will shape and define his experience with his creative intelligence” (Ross 89).

In order to extract Authentic Movement from the subway then, we could only let our kinaesthetic impulses guide our bodies in the space. As we allowed the subway to manipulate our bodies, I notice there were certain changes in shaping and weight holding patterns. Body shapes became more angular and the weight carriage dropped from the upper chest to the lower abdominals. It was clear then that the technological forces had allowed, at least some of us, to change our accustomed kinaesthetic stance. From these explorations, I felt ready to bring the extracted movements into the performance space and begin the choreography.

⁵ Anna Halprin is an American choreographer, performer, and teacher. She has spent her life exploring improvisation, developing the concept of kinaesthetic awareness, and the body’s relationship to nature. She has also investigated the power of movement as a source for healing the ailing body.

iNstant Connection: Deriving Movement Cell Phone Usage

Investigating the ways in which cell phone usage impacts the body was another key movement exploration. Cell phones are increasingly present in North American society and their growing capabilities allow an individual to control various aspects of their lives from a single device. A study performed in 2013 by Mary Meekers and Liang Wu found that mobile users check their phones 150 times a day. This same study found that the percentage of Internet traffic through mobile devices is steadily climbing. In May 2013, for example, 15% of Internet Traffic in the United States was accessed through a mobile device. According to Meekers, this trend is growing at a rate of 1.5 times per year and is likely to either maintain that trajectory or accelerate (Meekers and Wu 2013). In China, Meekers found that desktop usage was steadily declining, while mobile usage was steadily inclining and surpassed desktop PC usage in December of 2012. Canada was ranked #18 in the world for Smartphone Subscriber Growth with a growth of 21%. These figures indicate that North Americans are using their cell phones increasingly on a daily basis.

With increased usage, the way an individual uses a cell phone affects her kinaesthetic condition. Alexander knew that the relationship between the head, neck, and back influenced the entire body's posture and position (what he referred to as "primary control"). He found that "[a]ll movements...were influenced by his head position – when it was unbalanced or wrong then his entire body tensed badly" (Craze 10). The very act of our continual phone usage is thus altering our posture. Regardless of where the phone is placed, the head is, most likely, in a constant bowed position, thus misaligning the body. As the statistics indicate above, this could be for an extended period of time. This habitual stance, in combination with the tension the body experiences when the primary control is misaligned, presents the opportunity for the body to

kinaesthetically absorb and memorize this placement. The qualities a cell phone might create within the body were taken into the studio for further investigation.

Open Mind, Open Body: Creating “Steel Flesh”

When selecting the location for “Steel Flesh”, I wished to put the dancers in an environment where not only they, but the audience too would be in direct contact with the very urban technologies we had been exploring. Larry Halprin, Anna Halprin’s husband, was deeply influenced by architecture and social spaces. He knew that “architecture and the design of the environment could affect social behaviour” (Ross, 76), further emphasizing that technology does indeed impact the kinaesthetic experience. The stimulations within the space should also work to heighten the audience’s kinaesthetic awareness. I knew the work should be situated in an environment saturated with urban stimulations. Like Anna Halprin, using the “expansive vistas of water and land” in California to use the body “less as a vehicle of representation and discursive reason and more as a presence in the environment” (Ross 73), I wished the performance space to provide rich kinaesthetic stimulations where the audience, the performer, and the space could constantly interact.

With this in mind, I chose an outdoor fire escape, whose multiple staircases gave the space texture and dimension. The use of height would allow the dancers to recreate the sense of suspension and tension we explored in the transportation technology by swinging, shaping, and tensing their bodies around the structure. I found the perfect location in a small arts collective just off of Toronto’s Queen Street West. Parked cars, frequent pedestrians, busy stores, and quiet homes surrounded the space, creating the typical urban environment that would hopefully

reflect the experiences of a day-to-day Torontonians. The street itself was quiet, allowing for a more productive workspace, but its proximity to bustling Queen Street gave the space a hum of energy that fed the creative process. In many ways, the space fulfilled the same qualities that Anna Halprin's dance deck provided for her rural-inspired work:

"The dance deck creates theatrical spaces in the midst of raw nature. Trees replace walls, the ceiling is a canopy of trees and the sky, and the sounds of this space are the muted calls of birds, the fluttering of leaves, the hum of insects.... [The] deck is not architecture as a statement so much as architecture as response... The deck was not an object, it did not become an object in the landscape. It became part of the landscape and that is very different. The fact of its free form, which moves around responding to the trees and to the mountain views and other things, has been a premise of [Halprin's husband Larry's] ever since" (Ross 104).

In the same way that Anna's deck became an integral part of her choreography, the urban space fed my choreographic process. Theatre walls became brick walls, street lamps replaced Fresnels, and sound design was replaced by the rich urban soundscape. Just like Anna's deck, the space was alive, willing, and responding to the choreography. We took the movements we had kinaesthetically extracted and brought them into the space for choreographic construction. Each time we entered the space, it offered more opportunities to extract fresh movement.

Bringing the movements into the space was an enjoyable and fulfilling process. Movements that were commonplace in a transportation environment, such as swaying while standing, or allowing the body to reflect the train's vibration looked bizarre and out of place in this static environment. This was pleasing to me choreographically, as I did not want the dancers to look as if they were "imitating" their previously felt technological environments. Rather, I wished them to fully embody the technological qualities within their kinespheres to develop new movement. Bringing space-specific movements into a foreign environment allowed the dancers and myself to realize how once seemingly natural body positions can become unnatural in a new environment. This was a definite indication of technology's impact on the body.

Working within this static environment forced us to find new ways of recreating the continuous movement and stimulus the body experiences when using technology. In particular, I was interested in recreating the sense of suspension felt when transportation technology suddenly accelerates and decelerates. Using the setting's architecture, I had the dancers practice suspending their bodies off the railings, staircases, and beams. The dancers practiced the suspension in both solo and group work. Within the solo work, the dancers displayed a great mastery of their bodies, as they suspended their limbs from great heights with stunning acrobatic capabilities. It was the group work, however that provided real choreographic intrigue. As the dancers suspended their bodies in close proximity, I forced them to prevent any physical human contact from occurring. This practice created tension between the kinespheres as the dancers simultaneously pushed the limits with which they could suspend their bodies, while preventing kinaesthetic contact. The build up of this tension made the dancers' first physical contact a pinnacle moment in the choreography. This created tension between kinespheres would be further explored in my research on technology and human interaction.

In addition, the space provided a rich background of audible, visual, and kinaesthetic stimulants that the dancers could react to and, in the process, develop their movement. With it's proximity to Queen Street, the performance space had a constant stream of pedestrian chatter, cars whizzing by, and the occasional streetcar bell. While both the dancers and myself were aware of these stimulants, we did not consciously draw attention to them within the movement. Once in a while, the particularly loud chatter of a passing group or a police siren would distract a dancer, but overall, the dancers' primary focus remained on their kinaesthetic interactions. Upon viewing a rehearsal, an outside eye suggested the breadth of rich choreography that would be available if the dancers did consciously react to the stimulants in the environment. Since the

soundtrack for the piece was composed only of the surrounding stimulants, recognizing the sounds within the space would manifest a duet of interaction and reaction between the movement and the environment. This would ultimately bring the space to life within the kinesphere, not only for the dancers, but for the audience too.

As we tried incorporating these reactions into the choreographed movement, we realized this task was more difficult than anticipated. Often the dancers would become so immersed in their movement, that they'd miss the sounds of car doors closing or the honk of a horn. The dancers were using their situational memory, as Schusterman discussed, to focus only on the movements of their bodies. To divide the task between an internal kinaesthetic focus and an external environmental focus was no easy task. We performed several movement explorations to help the dancers develop this balance between the internal and the external. Though they were not always successful, the moments where the dancers did react were uncanny. There was intent in their focus as they drew attention to the outside stimulus, and their bodies both unconsciously (by contracting or tensing) and consciously (following the source of the sound by turning their head) reacted to the sound. As I watched the dancers act and react in response to the environment, I found my own sensorial experiences heighten. Having the dancers react to subtle sounds in the space gave me an awareness of sounds that I might not have otherwise had. Through this exploration then, we had not only created more kinaesthetically aware dancers, but also, more kinaesthetically aware audience members. We continued to develop this process right up to the performance.

Perhaps the most challenging aspect of this process was finding a way to end the piece. As I let the dancers freely improvise about the space, I realized that the dancers were not only developing their kinaesthetic interpretation of the space, but they were also developing their

interactions with each other. In many ways, these interactions recalled the Authentic Movement practices Janet Adler conducted. With two movers engaging in Authentic Movement, Adler found that relationships between the self and relationships between two moving bodies could be rediscovered and re-evaluated:

“When two movers are on the floor at the same time they simply are in relationship to each other whether they hear or touch each other, whether they speak about it afterward or not. The subterranean connection becomes mysterious and compelling, creating a very particular bond between movers. At times it is as though what happens for each individual only happens because of the presence of the other mover. It is here, early in the evolution of this form, that a mover directly bumps into a familiar and profoundly human challenge that will continue to deepen into this practice: the embodied tension between her longing to be in conscious relationship with herself and, simultaneously, her longing to be in conscious relationship with another” (Adler, 44).

Adler’s explorations indicate that the movement between two bodies ultimately reshapes their relationship. Halprin performed similar explorations. Using improvisation and Maragert D’Houbler’s kinaesthetic exercises, Halprin helped “heighten [her] students’ movement invention” and explore the “actions of individual limbs [to access] fresh movement material” (Ross, 86). In the same way, the dancers began to explore the space freely, indulging in their own kinaesthetic experiences and all the sensorial stimulations the space had to offer. I realized that this was my ending – setting the dancers free from the choreographic constraints of my own discoveries and allowing them to develop their own interactions. This is a theme I would later explore in my proscenium piece, “They Cyborgs’ Plight”.

The kinaesthetic explorations conducted for this piece indicate that transportation technology does indeed impact the body’s posture and movement faculties. Using the movements extracted from these investigations, I was able to create choreography that was unique to my body’s preconceived customs and habits. When taken into a choreographic setting that provided rich urban stimulus, I was able to develop these movements by questioning how

the forces and movements could be recreated within the kinesphere alone. The next step in this process was to explore how these technologies might have affected my kinaesthetic condition at a young age.

All the World's a Playground: Creating "My Technicolor Playmate"

For the autobiographical solo, "My Technicolor Playmate", I expanded the notion of how technology affects our kinaesthetic experience to question how children interact with technology and how, in reverse, the technology affects the ways in which children move. This premise was inspired by the assertion that children learn everything through experience. Everything children do, feel, touch, and encounter ultimately shapes the ways in which they think, behave, and grow. For most North American children, these encounters are increasingly with technological devices. A 2003 study by The Henry J Kaiser Family (hereafter referred to as the "Kaiser Foundation") found that 99% of children in America own a television set, 50% have three or more televisions in their home, and 36% have a television in their room. In addition, 63% of children live in a home with Internet access, versus only 34% who live in a home with a newspaper subscription. (Rideout, Vandewater and Wartella 4). A more recent study from the Kaiser Foundation (2010) found that in the past five years, "young people have increased the amount of time they spend consuming media by an hour and seventeen minutes daily, from 6:21 to 7:38 – almost the amount of time most adults spend at work each day..." (Rideout, Foehr and Roberts, 2). It is evident then that children are spending an ever-increasing amount of time interacting with media and technology.

The ways in which children play is also critical to their development. Roberta Michnick Golinkoff notes in her article "Why Play=Learning: A Challenge for Parents and Educators" that when children "are in environments where learning is occurring in a meaningful context, where they have choices, and where they are encouraged to follow their interests, learning takes place

the best” (Golinkoff Et Al. 9). Psychologists Jerome Bruner supports this theory, stating that play helps children solve problems and make them familiar with how things work (Shaffer 6). If children’s intellectual faculties can be developed during their encountered experiences in play, then their kinaesthetic faculties can be equally developed. Since this piece is meant to be an autobiographical solo, my research materials focused on the specific mediums I encountered as a small child. By analyzing these sources, I was more clearly able to estimate how my personal interactions with technology have had an impact on my movement.

Couch Potatoes?: How the T.V. Encourages Movement in Children

Television is one of the primary mediums that children are continually interacting with. Golinkoff notes from a 2003 study that children under the age of 2 are spending an average of 2 hours a day watching television and an extra 40 minutes per day watching videos. She cites a report from the American Psychological Study that indicates 25% of sixth graders watch 40+ hours of television per week, a task that, as Golinkoff states, “effectively [turns] media viewing into a full-time job” (Golinkoff ET AL. 5). As such, I used the television as a key source for movement extraction.

I began the process by analyzing cartoons, the assumed quintessential childhood pastime. Much study has been devoted to the premise that a child will mimic the actions and words of those who surround them. Developmental psychologist Jean Piaget’s extensive research proves this to be true. In his book, “The Developmental Psychology of Jean Piaget,” John H. Flavell notes Piaget’s understanding that imitation is a key component for the child learning movement and developing an understanding of herself:

“As the infant develops and intercoordinates primary circular reactions, one sees isolated and sporadic instances where the child inaugurates, or at least intensifies, some habitual pattern upon perceiving another person enact that pattern.... [T]he child treats the action of the model as one of his *own* actions, simply assimilating it to a primary schema as though it were a repetition he himself had just made.... Both the growing flexibility and mobility of schemas the growing coordination among visual, auditory, tactile and kinesthetic modes permit the stage-4 baby to overcome...limitations.... Thus, there begins to develop a perceptible opposition between the past – what he can do already – and the future – the sights and sounds he can accommodate to and thereby imitate. Imitation is now beginning to detach itself from adaptations-in-general to become specialized tool of acquisition” (Flavell, 124-125).

From Piaget’s findings, we can see that children do indeed imitate their surroundings as a form of learning new movement. Much like this research, the child is extracting new and previously unprocessed forms of movement to create her own choreography. Children’s author Kathleen McDonnell extends this idea in her book, *Honey, We Lost the Kids* (2001) by questioning how children may imitate what they see on television. She also considers the uproar this imitation can cause within parents. She notes that the show *Mighty Morphin Power Rangers* (featuring martial-arts action and teenagers with superpowers) was one example of the action-genre television programs that compelled children to mimic the violent behaviour on-screen:

“*Mighty Morphin Power Rangers* had only been on the air for a few weeks when the first complaints about kids copying the actions while on school playgrounds began to surface in the fall of 1994. Almost immediately, the show became the focus of near-hysteria worldwide. Canada became the first country to ban it when, after receiving a handful of complaints from parents, the country’s broadcast regulation agency ordered stations to pull it off the air.... The show was also linked to the sensational murder of six-year-old James Bulger by two eleven-year-old boys in Britain” (McDonnell 54).

Whether these violent-laden programs actually make children more violent is far too great a premise to justly discuss within the scope of this research. However, it is interesting to note that, as McDonnell reveals, parents believe that violent television is directly linked to violent children. This may be linked to the common misconception that the brain is mostly hardwired by the age of three. John Bruer’s *The Myth of the First Three Years* indicates that the brain is still

developing during adolescence. He also contends that advocates have “overstated the case for the importance of the first three years, unnecessarily frightening parents into believing that it’s game over if their kids don’t get everything they need in the first few years” (McDonnell, 156). This in turn creates a demonization of the technology, particularly from parents. McLuhan notes that this panic is usually the result from individuals encountering new technologies with an outdated mindset. He writes that the “the process of upset resulting from a new distribution of skills is accompanied by much culture lag in which people feel compelled to look at new situations as if they were old ones” (McLuhan 24). This in turn limits the individual’s ability to comprehend the positive possibilities new technology offers. I took an interest in this notion of the “panic-stricken” adult kept this theme at the back of my mind throughout the creative process.

I began my choreographic extraction with the Japanese anime program *Sailor Moon*. This was a favourite program of mine as a small child. As I watched the series, I noted the types of movement the animated characters performed, as well as the qualities of movement the characters embodied. Indeed, this program was saturated with movement and motion, almost to the point where it was disorienting. I took the qualities and movements I had noted into the studio in an attempt to develop choreography. It was a frustrating experience, mainly because the movement felt fragmented and it lacked authenticity. I realized there were two great flaws in my methodology: Firstly, I neglected to consider that television (and film), by its very nature, is a *fragmented* medium. Unless the director specifically creates a feature in “long take”, almost all forms of visual media are composed of fragmented bits edited together. The movement qualities I had extracted were thus disorienting and difficult to build upon. Secondly, I was not questioning how a child would receive, understand and interpret these movements. I had re-

watched these television shows as an adult and thus could not help but interpret them as an adult. For this reason, the movements extracted lacked authenticity. I knew I had to approach the process from a different point-of-view.

It then occurred to me that if I wanted an authentic investigation of how children react to the television's image, I would have to analyze a child's natural interactions with the technology. Luckily, I had a wealth of home videos at my disposal that featured just that; myself, as a child, playing, eating, talking, and dancing in front of the television. I would observe myself as a child interacting with varying forms of technology. These observations would become a key source for choreographic extraction and development. The age of the child ranges from 2-6 years old.

For the purposes of determining what movements were natural to myself as a child and what movements were influenced by technology, I analyzed both the interactions with technology, as well as the movements during free play. I took note of the exact movements I had performed and brought them into the studio to develop. This, however, was an unfulfilling task. Once again, I had made the error of incorporating imitation into my choreographic process. Though my movements as a child looked effortless and natural, they felt foolish in my now adult body. I blindly persisted with the task of imitation, however, convinced that this was the only way in which to extract a child's interactions with technology.

It wasn't until an outside eye revealed to me just how false these movements were portrayed in my choreography that I realized I could not continue with this process. Instead, the outside eye suggested I look at the *qualities* that I had embodied as a child, not just the steps themselves. By taking the qualities and exploring how they manifest within an adult body, she suggested that I would better be able to understand my kinaesthetic experience as a child and develop the choreography with better depth.

I returned to the videos and stopped looking at *what* I was doing as a child, but rather *how* I was performing the movement. Overall, I noticed that the television inspired the child's body to try new movements and explore her space. From here, I made a list of the basic qualities I had undertaken that determined my movement through space. These were:

- Weight transference (primarily side-to-side)
- Building momentum
- Twirling
- Twisting (Particularly in the torso)
- Indirect focus
- Relaxation of the lower limbs
- Sudden stillness
- Careful gestural movements

I then took these qualities into the studio and began to develop the movement. Bringing the *qualities* of my movement as a young child allowed them to manifest in my adult body. In many ways, I had to incorporate the principles Shusterman discusses on muscle memory in order to authentically revive these child-like qualities:

“By freeing our consciousness to engage other things, muscle memory extends our range of attention and perception and thus enhances our freedom of action. With many complex motor skills, moreover, it is often claimed (by philosophers, psychologists, and movement experts) that if we tried to perform them by explicitly recalling and deliberating at each step, we would awkwardly stumble.” (Shusterman, 99).

Stumbling is exactly what I had done. I had tried so diligently to recreate exactly what I had seen, that I had unwittingly hindered my ability to extract authentic movement. This is why taking the *qualities* of the movement is so important – I am not trying to imitate a young child, I am trying to kinaesthetically experience the joy she encounters with technology. When I considered this notion, the movement finally felt authentic and I was able to blend childlike sensibility with choreographic sense.

Child's Play: Kinaesthetic Affect of Toys and Video Games

My next area of interest was to explore how a child's interaction with handheld devices affects her movement. Technological advancements over the past two decades have allowed children's toys to become more sophisticated in their electronic incorporation. The attractive qualities of an electronic toy (bright lights, interactive functions, etc), combined with the sheer volume of electronic toys made available today, contends that children are interacting more and more with electronic toys than non-electronic toys. This is evident in a report from the European Competitiveness for Sustainable Industrial Policy (ECSIP) Consortium, entitled "Study on the competitiveness of the toy industry" (2013). The report indicates that many manufacturers are exploring the possibility of creating toys with electronic components, to keep up with the ever-growing popularity of technological gadgets:

The shift to hand-held and tablet technology, and wireless communication that is evident in consumer goods gives incentives to traditional toy manufacturers to investigate combining traditional toys with electronic gadgets.... European producers of puzzles and board games, such as Ravensburger and Jumbo are also offering traditional games on electronic platforms or add electronic accessories to their traditional products. [Also], Lego has created an iPhone app that challenges kids to quickly build small models with physical blocks. Hence, cross-over toys, which allow physical toys to interact with technologies, are one of the niches that have recently caught the attention of traditional toys and games manufacturers and that might potentially allow traditional toy manufacturers to generate new markets and make demand more stable." (ECSIP Consortium 76)

The necessity for these manufacturers to keep pace with a child's technological infatuation is made clear by the increasing sales in youth electronic products. In 2013, Youth Electronics in U.S. Domestic Sales Markets increased in sales by 32%, a growth of \$136 million dollars U.S. Though this was not the highest grossing category (\$565 million compared to Outdoor & Sports Toys which grossed 4.37 billion), Youth Electronics experienced, by far, the highest increase in sales from 2012 to 2013 (18% higher than any other category) (Toy Industry Association Inc.

2013). Since McLuhan asserts that “[a]ny extension [of man], whether of skin, hand, or foot, affects the whole psychic and social complex” (McLuhan 4), I maintain that the increasing presence and interaction children have with technology has altered their kinaesthetic condition.

Another key component to these hand-held explorations was video-game technology. Within the piece, I wanted there to be an evolution from the technology I engaged with as a small child, to the more sophisticated technology I engaged with as I grew⁶. For these explorations, I used the same methodology I had employed to create “Steel Flesh”: I used the Alexander Technique to engage in the activity itself and allow the body to form its natural movements and postures. Sitting and playing EA Games’ *007 Nightfire* (EA Games 2001) and Nintendo’s *Super Mario Sunshine* (Nintendo 2002), without any preconceived notion of what should or should not happen, allowed the body to succumb to its natural posture while playing the games. From these exercises, I discovered many similar qualities to those I had uncovered in the car: the shoulders slumped forward, the spine curved, the neck tilted back, and there was a distinct tension in the hands. What was particularly jarring in these movement experiences was that the only outside kinaesthetic stimulation came from the hand-held controller. Every so often, the control would violently buzz, sending a deeply felt kinesthetic vibration up the forearms. To have the body’s otherwise complete stillness interrupted by this sensation was particularly engaging. I realized that there was degeneration in how types of technologies affected my movement as I aged. While the television and toys had created free flowing movements in my body from ages 2-6, the video game technologies (that I interacted with around the ages of 7 and older) encouraged the body to remain still.

⁶ This process would have to be re-explored for children interacting with technology in 2014. It is evident, as Dr. Jeffrey Goldstein notes in his article “Technology and Play” that 11% of children under the age of 8 consume media through cell phones, iPods, and iPads, altering children’s kinaesthetic conditioning at an earlier age (Goldstein 2013)

I used this degeneration as a plot line for my choreography. As I moved throughout the piece, my inspiration for movement evolved from more traditional children's toys, to the more sophisticated television and video game technologies. I began first with simplistic hand gestures, the evolution of an "imaginary friend" (created by walking to fingers down the length of the body), and the discovery of the light-up musical ball. When the projection of a television was introduced, it took over the piece and lead into more sophisticated choreography. It was here that I wished to show how the television gives a child the opportunity to both imitate and develop movement. The projected television was large, meaning to recreate the sense of overwhelming wonder that a small child feels when watching a huge television screen. I then incorporated the qualities listed above to develop a movement that swayed across the floor. To help recreate the sense of joy a child encounters from television, I featured television programs from all manner of decades (and, thanks to my parents, these television shows were also a part of my childhood): *Sesame Street* (The Jim Henson Company 1988), *Barney and Friends* (The Lyons Group 1993), *The Nat King Cole Show* (Jordan 1956), and *All in the Family* (Nicholl 1974). Featuring these programs would allow the opportunity for audience members of almost any age to experience the same feelings of nostalgia and joy that I had felt in this choreographic process. The piece then progressed to feature video game technology. While the television portion prompted expansive choreography that travelled about the stage, the video game portion remained almost static, travelling in a straight line from upstage to downstage. The movement within this section was much more bound in terms of flow. Hunched shoulders and sharp isolations in the fingers and wrists were the predominant form of movement vocabulary. The piece finally ended with the dancer becoming so saturated with technology that it overcame her being. With this timeline, the piece evolved from a free exploration of the space and the self, to

a regressed, slouched and tense form of movement. This choreography suggests that technology does indeed have a kinaesthetic effect on children that evolves as they grow.

This process revealed that technology does kinaesthetically impact children's movements. This occurs primarily by the ways in which they interact and play with the technology. For it is through play, as we have discovered, that children more deeply understand their surroundings.

“Facebook Me”: The Kinaesthetic Affect of Online Interaction

Having better understood the ways technology impacts the body, I was now interested in examining how technology has altered the ways in which humans interact and kinaesthetically relate to one another. Over the past two decades, technology has increasingly evolved the ways in which individuals, particularly teenagers, communicate. The telephone, once a predominant method for verbal communication, has become subordinate to online communications and text messaging. Social media in particular has had a significant impact on human interaction. The Nielsen 2012 Annual Social Media Report found that Americans spent a collective 121.18 billion minutes online in July 2012, an increase of over 37% from 2011. Of these minutes, 5.7 billion were spent using the mobile web, an increase of over 29%, and 40.88 billion were spent using mobile apps, an increase of over 75%. While Personal Computers still maintain top usage statistics at 74.08 billion minutes spent, they saw the smallest growth with an increase of 25% (NM Incite and Nielsen 6). The study indicates that the growth in access to mobile and tablet devices is driving an increased use in social media, finding that users spend more time on social networks than any other type of site (NM Incite and Nielsen 4). What all these statistics ultimately indicate is that, as Scott Wallsten rightly points out, we are substituting many activities for online engagement:

“[T]hese activities may crowdout other, offline, activities. That is, many of the activities we do online, like reading the news or chatting with friends, we also did long before the Internet existed.... If people mostly do online what they used to do offline, then the benefits of time spent online is biased upwards, potentially by a lot” (Wallsten, 2).

With the ever-growing predominance and popularity of Social Networking, individuals are interacting more and more with each other via online platforms. This growth has provoked

questions of loneliness and interaction in the 21st century. Shimi Cohen's online video "The Innovation of Loneliness" (2013) determines that this loneliness comes from individuals sacrificing more and more time spent interacting face-to-face in order to fulfill other materialistic demands for wealth and careers:

"In a world where time is money, in which our surroundings continually pressure us to achieve more and more, our social lives have become tainted and more demanding than ever before.... However, our fantasies about substitutions [for online interaction] are starting to take a toll. We're collecting friends like stamps, not distinguishing quantity versus quality, and converting the deep meaning and intimacy of friendship with exchanging photos and chat conversations. By doing so, we're sacrificing conversation for mere connection." (The Innovation of Loneliness 2013).

Cohen's video directly asks the viewer to look at how the ways in which individuals interact has changed and to question whether this quantitative increase in connections has actually created qualitative friendships. In turn, my research questions how this growth in online interaction is affecting the ways in which individuals kinaesthetically connect.

The glaringly obvious challenge in this process came from the knowledge that it is nearly impossible to extract a sweeping generalized conclusion that technology alters the ways in which *all* individuals interact. Human interaction is, by nature, a subjective and varying experience. In his book, *Personality and Social Interaction* (1961), Robert H. Dalton contends that an individual's personality is shaped by the interactions she encounters as a small child. This development of the personality in turn shapes how the individual will interact with others in the future. Dalton notes the importance of familial interactions, particularly between the child and the mother. He also discusses how an individual's interactions with her environment shape her personality. Dalton agrees that, "no single conceptual system in psychology seems able to encompass all the significant aspects of personality" (Dalton 4-5). How an individual's

personality is shaped by her interactions and, in exchange, affects her future interactions can thus only be estimated through psychological theories.

While there may be many factors that affect individual personalities, Dalton notes the importance of experience in the forming of the human condition. Dalton indicates this impact by drawing on the analogy of a small child:

“The two-year-old who has lived in a benevolent society will approach almost any stranger with open arms and wide-eyed trust because he anticipates no harm or danger from association with [humans]. His experience up to that moment has not prepared him for actions of an unfriendly character, and there is nothing in his native endowment which causes him to beware of malevolent forces before he has experienced them. In other words no substantive content has been conferred on him by nature. He has great capacity to learn.... An absolute prerequisite to learning, to substantive memory, is experience” (Dalton 4).

If, as Dalton notes, experience plays an integral part not only in the development of an individual’s personality, but also in the ways in which she interacts with others, then the continual experience of technology via the social web does indeed effect kinaesthetic interactions.

The alteration of our kinaesthetic interactions may also be linked to our particular Western culture’s celebration of the individual versus the group. Marshall McLuhan suggests that this focus on the needs of the individual was born out of the creation of literacy. He states that by taking all the possible human expressions and refining them to a distinctly structured and separate alphabet refines an individual into a separate being (McLuhan 107). This makes her available to leave the group and focus on a life of personal intent. This way of living has become so ingrained in Western society that we know not fully how to understand it. McLuhan states that by extending our human faculties into artificial mechanisms, we become numb to kinaesthetic stimulations. The reason being that “we could not endure the leverage exerted upon us by such extensions” (McLuhan 302). To extend our faculties so far is too jarring an

experience. We must numb ourselves to the returning stimulations in order to exist with a sense of cohesion. The result of this numbness is a mindset Craze refers to as “end gaining.” This is the state in which one is so focused on her individual intents that she loses the minute experiences of her day-to-day existence:

“End gaining can be seen in every aspect of our society. The end result is always the most important. We have to get results, and it doesn’t matter what we do to ourselves to get those results. It starts as soon as we go to school. Getting exam results is important. We have to look to the future” (Craze 27).

While McLuhan states that this “numbness” ensures our survival, our intent focus on the end result makes it difficult to resurrect our kinaesthetic experiences. To understand then how our kinaesthetic interactions have evolved is no easy task. Though we cannot concretely identify the extent of this kinaesthetic alteration, we can draw attention to it through choreography, questioning its presence and significance.

To gain insight into just how much technology has affected kinaesthetic interaction, I helped the dancers let go of their conditioned “numbness” and regain a sense of their kinesphere in relation to other bodies in space. We began with a warm up exercise that asked the dancers to keep awareness of each other as they walked about the space. This exercise allowed the dancers to rediscover the interplay between their kinespheres and how bodies orient themselves within space. With the dancers kinaesthetic awareness reawakened, I then wished to investigate the differences in how bodies move when influenced by technology and how they move when influenced by organic sources. To do so, I used the imagery of magnets to explore how bodies are drawn together and separated within space. This imagery would help fuel the dancers in a series of improvisational explorations. We first began by exploring how bodies can repel from each other within space. Whenever the dancers came into a close proximity, they would repel from the approaching energy of another body. At first, the way the dancers repelled was very

timid. The dancers would either keep a fair distance from each other and repel quickly, or come into close proximity and repel slowly. As the dancers continued to interact, however, they developed a better understanding of how each body moved within space in relation to their own.

Dalton found this same relationship development in his own investigations:

“The longer you live with another person, especially if your relationship is an intimate one, the better able are you to anticipate his responses. Likewise if you live in homogenous social group, you go about your daily affairs with few surprises in terms of unexpected responses from others.” (Dalton 3).

From this investigation, along with Dalton’s theory, it is evident that the relationships between kinespheres can be altered over a span of time. How deeply these relationships develop depends on the proximity and quality of these interactions.

We then practiced the “attraction” force of magnets through contact improvisation.

Founding practitioner of Contact Improvisation, Steve Paxton, notes how the technique allows the involved movers to heighten their kinaesthetic sensations because they have to spontaneously move with another human being who is also in spontaneous motion:

“This system is based in the sense of touch and balance. The partners in the duet touch each other a lot, and it is through touching that the information about each other’s movement is transmitted. They touch the floor, and there is emphasis on constant awareness of gravity. They touch themselves, internally, and a concentration is maintained upon the whole body. Balance is not defined by stretching along the center columns of the body, as in traditional dancing, but by the body’s relationship to that part which is a useful fulcrum, since in this work a body may as often be on head as feet and relative to the partner as often as to the floor.” (Paxton 40)

The unexpected potential for movement development demands that the mover heighten her sensorial awareness so that she may be better able to receive and respond to any given impulse.

By having the dancers engage in this form of physical contact, they could gain a better kinaesthetic sense of themselves, as well as the bodies with which they interacted. In this element of the creative process, the dancers blossomed. They took their points of interactions

and explored various ways in which the movement could evolve. The overall outcomes of these explorations were satisfying as the dancers found numerous ways to develop their kinaesthetic interactions.

From these movement explorations, it is evident that dancers are more comfortable making full contact versus the in-between, unfulfilling task of repelling their bodies from each other in space. In this particular situation, this comfort level may come from the fact that these dancers have worked together before. The dancers thus have developed a trust that allows them to move together with great ease. The practice, however, of coming into close proximity with another body without actually touching can be unsatisfying. As a result, it is more difficult to develop these interactions.

Once we had determined how dancers might kinaesthetically interact without the influence of technology, I then asked the dancers to embody the technologically influenced qualities I had extracted from previous movement investigations. Trying a different method from the muscle memory explorations, I gave the dancers the image of an electrical current starting in one point of the body and gradually translating throughout the rest of the kinesphere. This imagery meant to fuel the dancers' intent by allowing them to focus their attention inwards to the minute nerves contracting and releasing within the muscles. This proved a difficult task for the dancers, as many of them interpreted this electrical current as a means to merely shake the ligaments of the body. But to gain a more authentic quality of movement, the dancers had to focus their attention on the muscles themselves. From my movement investigations on transportation technology, I knew that the kinaesthetic sensations the body undergoes do not cause the mover to extend to the edges of their kinesphere. Instead, the stimulations are more subtly felt within the muscles. By focusing on contracting the muscles themselves, I was more authentically able to recreate and

transcend the consistent vibratory feeling of transportation technology. This quality, however, was not so easily translated through verbal practice. As the dancers squirmed and shook within the space, I noticed that their movements were far too wide within their kinesphere. This created an over-exaggerated effect that made the dancers' movements look forced.

Despite the initial lack of authenticity within the dancers' movements, there were glaringly obvious qualitative changes that occurred in the dancers' interactions. The dancers turned their focus so fully inwards that they forgot their rich interactions and isolated themselves within the room. Rigidity developed in the space between the dancers' kinespheres that prevented them from engaging in any sort of contact. This change in interaction was the spark that gave clues as to how technology affects the body.

By consistently recalling technological experiences, while paying attention to the minute sensations that occur within the muscles, the dancers were eventually able to transcend their experiences of technology within their bodies. This practice indicates that the heightening of one's kinaesthetic sensations gives the dancer the opportunity to develop unique movement.

To concretely state that technology has altered the ways in which humans kinaesthetically interact is a feat that cannot be satisfyingly proven within the realms of this research. From these movement investigations, however, we have determined that by opening one's kinaesthetic awareness, we can better understand how the interactions between bodies develop in space. Furthermore, by performing qualities sourced from technological stimuli as well as organic forces, we can better predict how these varying energies have impacted kinaesthetic communication. The ultimate purpose then, is to bring to the mover's awareness that her kinaesthetic relationships with other humans are ever changing, based on the artificial and

organic energies with which she most frequently engages. This creates a more kinaesthetically sensitive choreographer.

The effect of technology on the body's kinaesthetic experience is equally jarring and subtle. Jarring, because the powers these technologies possess have ability to manipulate, mold, hurtle, and tense not only the human mind (by capturing it with the content of the medium), but also the very shapes, holding patterns, and sensations of the body. And yet, the body's experience of these stimulations is subtle, because the individual so often ignores or fails to recognize how the technology is affecting her body.

Transportation technology alters the body's kinaesthetic experience. The consistent movement of the vehicle through space shifts the ways in which the body holds itself. The movement also provides the body with a constant stream of stimulations that alter the body's sense of fluidity versus tension. But these are not the only factors that alter the body's kinesphere. Combining Marshall McLuhan's theory that "the medium is the message" and Richard Craze's theory that sitting destroys the body's alignment, we learn that it is not only the content of the technologies, but the ways in which we as individuals *use* the technology that has an intrinsic effect on the kinesphere.

The muscles absorb and remember external stimuli from technology. This is achieved through the constant tensing and lengthening of the muscle fibers and muscle spindles. With enough discipline and kinaesthetic attention, these stimuli can become conscious formulations for choreography. When focusing on contracting the muscles, particularly in the arms, neck and face, I was able to create subtle yet jarring movements that altered the body's shapes and efforts in space. These movements were neither broad nor far-reaching within the kinesphere. Rather, they possessed a more qualitative characteristic that altered the ways in which everyday movements were performed. The tension that the body naturally absorbed from day to day

stresses was, with practice, able to be molded and manipulated into new forms of movement for choreography.

Having “Steel Flesh” take place within an open-air, public setting, gave the movers the opportunity to kinaesthetically interact with their audience. Since the piece was performed adjacent to a busy public street, ordinary pedestrians had the opportunity to walk by, view the dancers, ask questions to other audience members, take pictures, engage in the piece if they so chose, and continue on their journey whenever they saw fit. The audience members who stayed for the entirety of the piece were encouraged to move about the space as they pleased (though few did, if at all). With the audience being at such a close proximity, the dancers could react to the audience’s presence and use this kinaesthetic energy to fuel their movement. This setting allowed both the dancers and audience to share the urban performance space, thereby allowing each to experience similar kinaesthetic impulses. This structure turns the audience member from a passive viewer into a potentially engaging, kinaesthetically aware performer.

In this particular exploration, however, the audience was not as engaged in terms of kinaesthetic involvement. Some pedestrians who entered the piece halfway through voiced comments amongst their groups. The audience members who viewed the entire piece, however, rarely moved about the space. For future explorations, I am interested in investigating how an audience who changes place in the space and, perhaps, even joins the movers in space, would alter the kinaesthetic relationships between the dancers. If the audience felt compelled so, could they use their heightened kinaesthetic awareness to fuel movement? Could they develop a rich movement vocabulary by interacting with the dancers within the piece? How would this change the outcome of the performance as a whole? These are questions I wish to further explore.

The proof that this type of performance heightens the audience's kinaesthetic awareness was made immediately clear following one performance. After the piece, an audience member commented that in watching the dancers, she heard audible stimulants that she would have otherwise never noticed. What was once "white noise" or "background noise" became jarring inflections in the performance space that enhanced the breadth of the choreography. Devoid of the musical saturation that so often accompanies dance pieces, "Steel Flesh" allowed the audience members to use the sounds of the city to create their own soundtrack. The slow qualitative movement of the dancers focused the audience's eyes inwards, so that their remaining senses could be directed outward for exploration. Even if the viewer was so engaged in the piece that she ignored these audible stimulations, the mere glance of a dancer's focus in response to these stimulations would arrest the viewer's attention and force her to unconsciously respond to the sound. While the intent of this choreographic exploration was to heighten the choreographer's kinaesthetic awareness to bring to life the body's experience of technology, we have learned, in effect, that all those involved in the creative process undergo the same awakening.

These research investigations have also revealed that it is difficult for a dancer to divide her attention between remembered choreography and the improvised stimulants occurring within the environment. Because of the repetitive way in which most dancers rehearse choreography, their muscles intrinsically remember the movements. The actual performance then, often passes by in a whirlwind of movement. This makes it difficult for a dancer to become responsive to other forms of stimulus, as any distraction can throw her off the task at hand. I saw this again when developing "The Cybrog's Plight": Whenever the dancers were fully focused on their kinesphere (to create the electrical current), it was difficult for them to be influenced by the

stimulants within the present space. While we revealed that this ignoring of outside stimulants could be lifted with practice, further study is needed to see just how far the interplay of choreography with room for improvisation can be developed.

It is integral to note that extracting movements from technological interactions exactly as they occur does not necessarily create authentic and rich choreography. Since the experienced stimulations are transcendent, it is difficult to recreate them without losing essential influences of movement, such as weight-holding and suspension. This is why taking the *qualities* of the movement and not merely imitating the experienced stimulations is so important – we are not trying to imitate being on the subway, we are trying to extract and bring to life the kinaesthetic experiences that arise from being in the subway car. Furthermore, we are not trying to imitate a 3-year-old child dancing to *Beauty and the Beast*, we are trying to embody the inner joy and inspiration that came from her experience within the choreography.

Using nostalgia as a stimulus for choreographic creation proved useful in creating “My Technicolor Playmate.” Since the transcendent experiences of the child could not be concretely relived, it was useful for me as a choreographer to analyze my movements as a child through home videos. These videos not only provided a wealth of movement possibilities, but they also created a sense of nostalgia. Seeing my childhood home, hearing favourite songs that had been long forgotten, and watching myself freely play, awakened certain kinaesthetic memories. These memories created a sense of euphoria and joy that was equal to the present joy the child had experienced. Using this nostalgia to embody the child’s joy was integral to this choreographic process, as it allowed the potential to recapture kinaesthetic experiences that are long forgotten.

This process also considered that the movements a child engages in might not always be sourced from a technological encounter. The types of movement the child partakes in could have

been developed in a dance class or on the playground. If a child can learn and develop her movements as easily from a dance teacher as she can from the television, then technology could potentially have no influence on the child's kinesphere. The difference, then, between a dance class and a child copying movements from the television is that the television presents the movements to the child with no expectation that she will follow. In a dance class, children are most often expected to copy the teacher as closely as possible by constraining to a distinct technique and a set of classroom guidelines. Essentially, the children are meant to mimic and not develop. One exception is, of course, Anna Halprin. Using improvisation, Halprin offered her students a method to encourage their movement invention (Ross 86). While it may sound preposterous, a child's interaction with the television provides the same type of atmosphere as Halprin's dance classes – the child is allowed to move freely, follow her own impulses, and there is no expectation that the child will perform set movements in a set way. Like Halprin's class, the child is interacting and mimicking the television in a free and unhindered environment, allowing her to develop her kinesthetic awareness. This research is in no way contending that the television should replace or is equal to the experience of movement that comes from dance classes. It is merely interesting to note that the free environment the television provides allows children the opportunity to develop their own movements.

Through psychological study, we know that a person's experiences affect their personality, thereby determining the ways in which they kinaesthetically interact with others. Since so many of our day-to-day experiences are now linked to technology, combined with the knowledge that individuals are increasingly socializing online, it is reasonable to state that these social interactions also change the ways in which individuals kinaesthetically interact. Though the extent of this effect requires more study, this research provides a foundation; we know that

embodying various qualities of organic and technological stimulations changes the way the body moves through space. This, in turn, changes the way the dancers kinesthetically connect and relate to one-another. These investigations have also revealed that dancers can increase their kinaesthetic awareness through movement. By opening their focus to surrounding kinaesthetic sensations, dancers can prevent the continual “numbing” of their day-to-day experiences. The heightened sensitivity will instead prepare the dancer to become aware of her changing kinaesthetic relationships.

While the explorations performed throughout this research have been conducted exclusively in Toronto, I have included scientific studies from the U.S. and Europe to support my findings. Since the age of electronic devices and online interaction has shrunk the globe to, what Marshall McLuhan refers to as, a “Global Village,” the experiences of the individual living in urban Western settings, regardless of country, have become similar. However, to determine just how similar (or to prove that these experiences are not similar at all), movement investigations would have to be explored in the subways of New York, the trains of Hong Kong, or the cars of London. Though these types of technology are inherently the same, their use in varying countries (that each possess their own unique history and culture) will undoubtedly produce variants in the kinaesthetic experience. Studying the kinaesthetic experiences of the individual in multiple countries would help determine the extent to which technology has impacted the body.

In summation, technology does indeed have an impact on the body’s kinaesthetic condition. Though it is not an easy practice, it is possible to extract stimulations from technological sources and interpret them into choreography. The result of these movement explorations is that the choreographer is blessed with a wealth of opportunity to extract original

choreography. Furthermore, the opening of her kinaesthetic awareness makes it possible for her to find choreography from other forms of stimulus. As Gretchen Schiller notes in her paper, “Kinaesthetic Inscriptions”, the body and urban technologies are in a constant relationship, where the human creates the machine and the machine, in turn, affects the human’s kinaesthetic condition (Schiller, “Kinaesthetic Inscriptions, 106). As technologies continue to progress, the heightening of the choreographer’s kinaesthetic awareness will constantly present her with opportunities to extract new choreography. When these factors are cohesively embodied within the choreographer, she can authentically understand and interpret the nature of her existence.

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Appendix A: Muscle Memory Explorations

Muscle Memory explorations were conducted at the beginning of this research to determine how technology's impact was already lingering in the kinesphere. I began by having the dancers lie down in the studio, close their eyes, and quiet their minds to bring their kinaesthetic focus into the space. Once it seemed the dancers were relaxed and devoid of any excess tension, I asked them to notice the subtle sensations in their surroundings; the hum of the air conditioner that made the floor vibrate, the whirring of the overhead fans, and the distant murmur of passing cars were all technological sources that fed the energy of the space. I did not ask the dancers to move to these sensations, but merely to notice them. By bringing the dancers into the space this way, I hoped to sharpen their kinaesthetic memory, making it easier for them to remember past experiences. I then asked the dancers to recall their kinaesthetic experiences within a car. I asked them to recollect what sights or sounds they might encounter (to put them in the setting), to remember how the body is oriented within a car, and what sensations the body may experience.

In the first few minutes of the movement investigation, it was not clear if the dancers were tuning into their subconscious muscle memory to extract movement or if they were aimlessly moving in a preconceived pattern. As I studied their bodies, I began to notice subtle movements that could be reminiscent qualities of driving a car. One dancer appeared to be embodying the continuous circular motion of a wheel. She began sprawled out on the floor, her legs and arms extending to the edges of her kinesphere. She started rolling about the floor, coming to a hunched plank position. She continued to roll onto her back where she maintained the rolling quality in her hip. She developed this movement into a twisting of the torso from side to side.

Her knees also embodied this side-to-side movement. As she lay horizontally, she walked her legs across the floor, rotating her body in a circular motion. Her overall movement had a free flow quality.

The second dancer, however, had a somewhat different interpretation. She began with her knees bent and her back erect along the floor, more closely imitating the vertical orientation of a body in a car. Her right foot shook. It was unclear whether she was embodying the activity of the right foot driving or merely sensing the constant vibrations experienced within a car. Her left foot, however, was notably still. She seemed to be embodying the traditional driving technique where the right foot controls the acceleration and deceleration, while the left foot remains docile. At times the arches in her feet tensed, as if drawing attention to the significant amount of control the feet possess within a car. Her hands are another point of interest. Every so often, she shook her hands, wiggling the fingers back and forth. It is unclear whether she is recalling tension in the hands while driving or if she is remembering the subtle vibrations of the car being transmitted through the steering wheel. Her general quality of movement was more akin to bound flow.

I soon realized there was a flaw in my methodology. To more accurately bring to life the sensations the muscles and nerves experience within a car, the body should inhabit a normal sitting position. Having the dancers lie on the floor and try to extract movements was not a truthful kinaesthetic experience of driving in a car. I instead placed a chair by each dancer and asked them to form their movements to the chair. Once the dancers were sitting, it was easier to tune into the subtle sensations that normally occur while driving. To further situate the dancers, I gave them specific areas of the body to focus on (such as hands, neck, and shoulders) and asked them to remember what tasks these parts perform in a car. Recalling specific qualities that

certain body parts encounter can help bring the more minute and subtle sensations to the forefront of one's awareness. For example, a dancer may remember that in a car, she always places the right arm on the steering wheel and the left arm in her lap. She may then remember that the anxiety she feels while driving causes her to sit forward with her back erect. She may then remember the sensation of slamming on the brakes and how her body reacted with the shoulders hunching forward, the abdominals contracting, and the fingers tensing. Now the dancer has started to tune in to *what* is happening within her body and *how* her body is reacting to the outside technological extremities. By simply asking the body to recall the encountered stimulations, an unnoticed form of movement can be realized.

Once the dancers were situated in the chairs, their kinaesthetic impulses came to life. They began to not only embody the sensations they experienced within cars, but also to develop these sensations into choreographed movements. The first dancer continued her free flow movement but it was much more formed to the aesthetics of a car's structure. The second dancer presented a marvelous embodiment of the subtle tensions the body experiences while driving. Continuing her exploration of how the tensing of the right foot leads the rest of the body, the second dancer created small tense shapes within her torso that mimicked the tension in her foot. The most incredulous moments happened when the dancers, without looking at each other, began to embody the same lurching movements forwards and backwards. Though they happened in their own time, the movements were rich and full of kinaesthetic integrity. By orienting the dancers as if they were in a car allowed them not only to discover that they could indeed recall unconscious movement, but also, that the dancers could hone these qualities into rich movement for choreographic creation.

Appendix B: Kinaesthetic Experiences of the Train

Once we were given insight into technology's lingering presence in the body, I took these kinaesthetic explorations into the urban setting. My first kinaesthetic exploration began on the train. On my morning commute, instead of engaging in the usual technological distractions (listening to music, playing games on my phone, etc), I closed my eyes and brought my focus to the train's movement and my body's kinaesthetic reaction. As the train gathered speed, I began to observe the general sensations that the body was experiencing: When the train moved at full speed, the body was still in movement but more tense in quality, as if to prevent the intrinsic fear that the body should go hurtling through space or make contact with a neighboring body. When the train slowed, this tension maintained. At times, the slowing train swayed vigorously, forcing the body to mimic the motion. Since the body was already tense, the way in which it swayed was jerky and uncoordinated. I questioned, if the body was relaxed, would the swaying change its quality? I revisited this question on the next train ride. When the train slowed, I allowed the body to relax so I could experience the full breadth of the train's influence. Once relaxed, the swaying became more fluid. The knees, in particular, felt loose and, with momentum, they swayed back and forth. The momentum in this movement also allowed the abdominals to experience gentle swaying. Overall, the body felt looser, more relaxed, and was able to experience the full kinaesthetic influence of the technology.

On the train, the body experienced a continuous yet subtle overall vibration. This vibration was only interrupted when the tracks were uneven, sending the body into a frenzy of quick vertical impulses. I was intrigued by this feeling of constant movement and took it into the studio to explore whether this constant stimulation could be recreated in an empty and quiet environment. However, I eventually grew weary of embodying the consistent vibrating

sensations. To broaden the scope for movement inspiration, I pinpointed what parts of the body were most affected by the train's movement. I revisited the relationship between the train and the body, turning the focus inwards to notice from what part of the body the kinaesthetic sensations were originating. As I continued to turn my attention inwards, I noticed that the movement stemmed from the weight-bearing points of the body that were making contact with the train. These parts were mainly the lower back and the hamstring muscles. The lower back in particular felt a strong sensation that absorbed the vibrations from the train and extended to the rest of the body. The hamstring muscles, on the other hand, experienced the more jarring sensations emitted from the train. This resulted in the legs experiencing more movement while the rest of the body tensed.

Appendix C: Kinaesthetic Experiences of the Car

The car was another urban technology in which I performed kinaesthetic movement investigations. I incorporated Alexander's process of inhibiting (by engaging in the activity and then stopping part-way through to notice the body's weight, tension, and shape) to determine how this technology was altering my kinesphere. While driving, I'd periodically stop mid-task and question the positions of the body – which parts were tensed? Which parts were relaxed? Where is the weight being held? Which areas were absorbing the bulk of electronic sensations? Can these positions be taken to a further extreme? As I asked these questions, I began to notice certain patterns in my kinesphere: the shoulders sagged forward, the elbows were contracted inwards to help support the upper torso, and the head was tilted back. The hands became a particular interest in these kinaesthetic explorations. Despite the body's seemingly sagged and rounded shape, the hands were tight and tensed. This tension only occurred when driving the car. Whether it was the psychological stress of driving the car or out of mere necessity to help support the slumped shape of the body, I considered the ways in which hands interact with technology. I would take these shapes, tensions, and questions into the studio for further study.

Appendix D: Kinaesthetic Explorations of the Subway

One of the main sources for movement for “Steel Flesh” came from explorations performed by both my dancers and myself in the subway. In the underground space, I instructed the dancers to simply sit or stand and allow the stimulations they experienced to wash over their kinespheres. When the dancers felt compelled to do so, they were to use these stimulations to inspire movement creation.

In this first investigation, the dancers emitted different qualities of movement. Using the shifting acceleration and deceleration force that occurred, one dancer explored leaning and stretching the body so it suspended with the energy of the train. She also created suspension within her body by anchoring herself between two fixed points. This position allowed her torso and legs to swing freely while the arms supported the movement. Her stance was often wide to help support her body and maintain balance. Overall, this dancer was more interested in exploring shifting weight and the surrounding space.

While a second dancer explored some of these same qualities, she was more interested in the jerky and vibratory qualities of the subway. She felt them in her neck and hands, allowing these parts of her body to tense and shake throughout the movement process. Every so often she’d perform a startling movement, such as standing up quickly or changing direction. She’d then relax her body and allow the subtle vibrations to overtake her kinesphere. This dancer appeared less focused than the first dancer. Her eyes shifted, as if she was uncertain she was performing the movement investigation “correctly.” It is my contention, however, that this uncertainty meant she was forcing herself to shed her preconceived forms of movement.

As the dancers continued to explore the space, they did indeed become more comfortable extracting movement authentically. I could see this authenticity manifest as the qualities of the

dancer's movements became more coordinated. They began responding to the kinaesthetic impulses with the same types of movement. For example, when the train provided a certain amount of momentum, they both leapt from their seats to a tall and erect position. This evolution indicated that the dancers were beginning to tune into the kinaesthetic sensations that were actually occurring and not forcing any of their own movement.

As the explorations continued, perhaps the most intriguing discovery came from changes in weight carriage. I noticed, when studying the footage at a later date, that both myself and the other dancer allowed our centre of gravity to drop as we progressed throughout the explorations. Due to extensive ballet training, we generally carried our weight higher in the torso. However, this change in gravity had created an entirely new kinaesthetic demeanor within our bodies.

Appendix E: Exploring Human Interactions in an Urban Space

Perhaps the most challenging aspect of choreographing “Steel Flesh” was finding a way to end the piece. Near the end of the creative process, I asked the dancers to just move freely about the space. It was my hope that by allowing the dancers to explore the space naturally, an ending would resolve itself. For the first 15 minutes, or so, the dancers relied on their dance training to perform stellar technical movements. I watched in awe as the dancers, with great agility, twisted themselves around the staircases and fearlessly suspended their bodies off the railings. After sometime, I could tell they grew weary and didn’t have any more movement “ideas.” But I gave them no indication that the movement exploration was over. For about 5 minutes or so, they half-heartedly moved about the space. And then, as if by some other force, the dancers came back to life. When they could no longer rely on the training that had been built into their repertoire, they began to look for new facets of movement inspiration. They used the textures of the brick, the vines crawling up the walls, and the varying levels of the staircase steps to reconfigure their movement. Yet, the most fascinating evolution to witness was how the space transformed the dancers’ relationships with each other. They began to work together as playmates, using the space in the same way children explore a playground – every facet offering a new opportunity for negotiating their interactions. They played peek-a-boo, shadowed each other throughout the space, and, when one dancer immersed themselves in a position, another would tease them by pulling their feet or repositioning their arms. In many ways, these interactions recalled the Authentic Movement practices Janet Adler conducted. With two movers engaging in authentic movement, Adler found that relationships between the self and relationships between two moving bodies could be rediscovered and re-evaluated:

“When two movers are on the floor at the same time they simply are in relationship to each other whether they hear or touch each other, whether they speak about it

afterward or not. The subterranean connection becomes mysterious and compelling, creating a very particular bond between movers. At times it is as though what happens for each individual only happens because of the presence of the other mover. It is here, early in the evolution of this form, that a mover directly bumps into a familiar and profoundly human challenge that will continue to deepen into this practice: the embodied tension between her longing to be in conscious relationship with herself and, simultaneously, her longing to be in conscious relationship with another” (Adler, 44).

Adler’s explorations indicate that the movement between two bodies ultimately reshapes their relationship. Through the dancers interactions with technology and their heightened kinaesthetic awareness, I began to see an evolution in the ways they interacted with each other. This is a theme I would later explore in my proscenium piece, “They Cyborgs’ Plight”.

Appendix F: Analyzing Home Videos to Extract Child-like Movement Qualities

For my autobiographical solo “My Technicolor Playmate”, I was curious to discover how my personal interactions with technology had potentially shaped my movement patterns and qualities. I studied home videos of myself as a child to determine this kinaesthetic impact.

When the child freely played without technology, the movement was both energetic and devoid of any set structure. She is almost always in a constant state of movement, even when sitting; the knees bounce together and apart, the feet consistently tap, and the legs often hang open, relaxed and devoid of any tension. When she moves through space, she often creates certain patterns in her pathways. She also enjoys repeating the same movements over and over. While these movements and pathways create structure, it is a structure she has set for herself. Overall, her movements are energetic, enthusiastic, and she loves, as many children do, to explore the stimulations in her surroundings.

There are, however, subtle differences that occur when she is in the presence of technology (mainly, the television). The child watches many television programs that feature music. Because of this, she responds primarily to the music that technological devices emit. Her primary movement qualities include a transfer of weight that steps side to side in a clumsy and crudely rhythmic nature. As she becomes more confident in her steps, she begins to throw more weight into the movement by swaying her hips side to side. She also enjoys bouncing her knees continuously to the music. When she sits, she continues this rhythmic quality by rocking back and forth.

One of the primary differences between the free play and the interactions with technology lie in her energy and consistency of activity. When she is engaged without technology, she is in a near-constant state of activity. When she is in the presence of the television, her activity

fluctuates. She goes from wild and exaggerated movements to a very lull and quiet stillness. The television will catch her attention for a moment and she will be hypnotized by it's presence. She is unresponsive to any other stimulation. If she is spoken to, she may reply, but only with a docile and monotone voice. This voice is a mere memory of the gleeful chatter she had only just emitted. After some brief moments of stillness, she picks up where she left off in her activity. There is, however, usually a change in the movement; she has incorporated what she has just viewed into her movement; If it was a particular song that fascinated her, she will start singing; If it was a sequence of dance movements that caught her eye, she will incorporate this dance into the play. These components are often revisited when she is playing without the television. The programs have influenced her movement and she has incorporated them into my kinesphere.

The qualities of her movement are also affected. When she is not interacting with technology, her movements are unbalanced but not cautious. Her movements with technology, on the other hand, are somewhat more precise. Just as McDonnell noted with the children who watched *Power Rangers*, she is attempting to mimic the actions she has seen on the television. Because of this, she is somewhat more careful and delicate in her movement. Remarkably, her movements do not consistently retain this quality. Rather, as previously mentioned, she brings the learned movement into her play. She begins to elaborate on the movement and put certain embellishments on weight or tonality where there was previously none. I witnessed the same developments in other children featured on the video-compilation of the television show *Sesame Street*. In the video, *Dance Along!* (1995) the children perform a song called "A Very Simple Dance" and are asked to follow the movement directions of the main performer, Mike (played by the adult Ward Saxton). The repetitive music and gradual additions of movement is similar in quality to "The Hokey Pokey" or "Head, Shoulders, Knees, and Toes." While the children

diligently copy Mike, there is an unmistakable flair to their movement that is coming directly from the children. They bounce along to the music at their own pace. Though the children take care to perform the movements accurately, some will put their own emphasis on the movement. Even more fascinating are the in-between moments, the bridges of music where the children are free to move as they desire. Here is where three children really let loose and begin to explore their own kinesthetic dimension. The other three gaze in fascination at Mike (in the same way the child watched the television), captivated by his energy and eagerly awaiting the next instructions. Both these areas provide a richer source for movement development as it derives from an authentic source of pure pleasure. In short, these explorations indicate that, as a child, I take what I have learned from the television (or the television host) and incorporate it into my own movement vocabulary. This makes the movement unmistakably and irrefutably my own.

Once I had studied my personal movements, I broadened the source for my movement extraction to children's toys. Using toys with electronic components, I performed movement explorations within the studio. I was particularly fascinated with a light-up musical ball (a toy similar to one I had owned at a young age). The ball provided much stimulation in terms of the visual, audio, and kinesthetic sensations. Rolling the ball on the floor, I practiced imitating the clunky roll the ball possessed in my torso and lower limbs. I then worked moving the ball around the space and allowing my body to react to the ball's movements. I let myself embody the ball's qualities: rolling, fluid, and with the potential to change direction at any possible moment. The ball and I developed a duet of action and reaction, both playing off each other's impulses and allowing our movements to flow freely about the room. I then, eventually, took the ball away and explored how these movements could manifest and develop without the ball. These explorations gave me insight as to how interactions with toys influence children's movements.

Appendix G: Exploring Human Interaction in a Technologically-Saturated World

To determine how technology has altered the kinaesthetic interactions between Western bodies, I took the qualities extracted from previous experiments and gave them to the dancers who interpreted “The Cyborgs Plight.”

I began the process with a warm-up exercise to help the dancers shed their kinaesthetic “numbness”, as McLuhan discussed, and heighten their awareness of their kinespheres in relation to the other bodies in the space. To do so, I gave the dancers a warm up exercise in which they walked about the space, keeping one person (secretly) in their peripheral vision at all times. The dancer then picked another body to keep within their peripheral vision. The goal of the mover was to try and create an equal distance between both themselves and their two conquests (mathematically, to create an equilateral triangle). When the mover felt the triangle was complete, they should come to a complete stop. Though this investigation often ends with fitful giggles as the movers scuffle about the floor, the attempt to create this perfect spatial arrangement allows the dancers to develop a keener awareness of others within space.

I then questioned how these dancers might have interacted before their day-to-day lives were potentially saturated with technology. Since magnets are a naturally occurring force within nature, the dancers and I used imagery of repelling and attracting to create energy and drive movement in group improvisations. We began first with “repelling”, which required the dancers to repel their bodies into space once they came into close proximity. As the dancers moved about the studio, I encouraged them to sense this repelling within their whole body, particularly within their kinaesthetic centres. This would allow the dancers to feel the full force of their interaction.

In our first attempt at this exercise, the dancers would start repelling when they were still at a fair distance from each other. Their bodies had a free flow quality with indirect focus. It was

as if they lacked a certain comfort level or trust to get really close to another body and then repel. I challenged the dancers to get to a place where they were almost touching before engaging in the repelling action. Without any instruction, the dancers developed a slower quality of movement with bound flow and a more direct focus. By asking the dancers to decrease the space between them, they were less comfortable playing with the extremities of their kinespheres. In the weeks to come, we would continue to practice this development of trust, challenging the dancers to come into close proximity and feel the compulsion to repel with great energy.

Practicing “attraction” was a much more fulfilling process in the movement improvisation. Having extensive experience in contact improvisation, combined with their pre-existing, trusting relationships, the dancers courageously moved, reacted, and manipulated the other bodies in the space. Hands, elbows, and backs were a common point of contact in the beginnings of the investigations. As they progressed, however, the dancers became even more confident in their contact. They took those initial forms of contact and practiced developing these movements through space; They played with high and low extremities, rolling the work into the ground and then re-emerging; They became more confident in manipulating each other’s bodies, pulling and lifting the legs, arms, backs, and feet of the other dancers. This treatment allowed the manipulated dancer in question to react and adapt their movement to the outside force.

I then questioned how technology had changed the ways in which these dancers interacted. Using the imagery of an electric current, I asked the dancers to create tension within one part of their body by allowing the muscles to contract. The dancers should then pass this current throughout their bodies, allowing each part of the kinesphere to progressively feel this kinaesthetic change in tension. Remarkably, without being told to do so, the dancers forgot the rich kinaesthetic interactions they had only just encountered and isolated themselves within the

space. This created a rigidity between the dancers that reminded me very much of my subway explorations. Within this vessel sat countless occupants. Though they faced each other at varying and intersecting angles at close proximity, eye contact with the other passengers was strictly forbidden. There seemed to exist an unspoken rule that no one was to interact through any form of the kinesphere. As I examined the passengers, I noticed a subtle movement in the torso. Whenever the train jerked or braked, the resulting sensation caused a slight tensing of the torso. The body, rather than giving into the force, was resisting the urge to plummet forwards. This resistance increased if the bodies were in close proximity. The fear of invading the kinesphere of a stranger created angular shapes within the body. I was intrigued by these shapes and explored them further in my movement explorations. The resistance of force, combined with the fear of kinaesthetic connection allowed the body to alter weight carriage and create angularity unique to the accustomed movement patterns of the body. I would continue to explore this angularity, combined with the tension of eye contact, with the dancers in the choreographic process.

Tensions between timing and free work were also investigated throughout these movement explorations. For the majority of the choreography for “The Cyborgs’ Plight”, I refrained from giving the dancers set counts. Instead, I opted to let the dancers’ interactions guide the length of the choreography. This would give the choreography a more human quality since it is their interactions that allow the story to progress. For the end of the piece, however, I had the dancers regress into a more “electronic” quality. To bring out these qualities in a more intense manner than at the beginning of the piece, I applied strict synchronized timing to the dancers’ movements. This was inspired by McLuhan’s theory that the clock imposes strict regulations on the self:

“As a piece of technology, the clock is a machine that produces uniform seconds, minutes, and hours on an assembly-line pattern. Processed in this uniform way, time is separated from the rhythms of human experience.... Not only work, but also eating and sleeping, came to accommodate themselves to the clock rather than to organic needs.... [M]echanical measurement of time as a principle of applied knowledge joined forces with printing and assembly lines as means of uniform fragmentation of processes.” (McLuhan 147).

The clock’s ability to impose a structure on the self makes human existence a cyclic, never-ending process on the mechanical assembly line. This imagery inspired me to take the dancers and turn them into an assembly line of synchronized movements. The satisfaction of synchronized movement created a sense of completion in the Cyborgs’ journeys – they moved from a semi electronic embodiment, to a more human embodiment, to a more fully realized immersion in the electronic quality of movement. The implication of rigid timing helped realize the full technological quality of this movement.